HOUSE OF COMMONS

Treasury Committee

Oral evidence: Bernanke Review of Bank of England Forecasting, HC 495

Wednesday 15 May 2024

Ordered by the House of Commons to be published on 15 May 2024.

Watch the meeting

Members present: Dame Harriett Baldwin (Chair); Mr John Baron; Samantha Dixon; Dame Angela Eagle; Stephen Hammond; Danny Kruger; Keir Mather; Dame Siobhain McDonagh; Anne Marie Morris.

Questions 1-58

Witness

I: Dr Ben S. Bernanke, author, Bernanke review.

Examination of witness

Witness: Dr Ben S. Bernanke.

Q1 **Chair:** Welcome to the Treasury Committee, where we are talking to Dr Ben Bernanke about his recent review of the Bank of England's forecasting. Dr Bernanke, can I start by asking you to introduce yourself?

Dr Bernanke: Yes, ma'am. I was raised in South Carolina, in the United States. I have a BA from Harvard and a PhD in economics from MIT. For 23 years, I was a professor at Stanford and Princeton, where I did research on monetary issues and macroeconomics. For that research, in 2022, I received a Nobel prize in economics. From 2002 to 2014, I was in the Government, both the Fed and the White House. From 2006 to 2014, I was the chair of the Federal Reserve. For the last 10 years, I have been unaffiliated with the Government. I have been sitting at the Brookings Institution, which is a think-tank in Washington DC, where I have been writing books and articles about monetary policy and other issues.

Chair: Thank you, Dr Bernanke. The Committee warmly welcomed your being selected to undertake this review, and we want to thank you very much for your review.

Dr Bernanke: Thank you.

Q2 **Chair:** It is fair to say that when the review was published, people were really quite surprised by how hard-hitting and impactful some of your recommendations were. Going into the review, were you expecting your recommendations to be so extensive?

Dr Bernanke: No. One of the reasons I undertook the review was that I had never been exposed to the internal workings of another central bank besides the Fed. I had a lot of interest and respect for the Bank of England, which is one of the oldest central banks in the world and a leader historically in transparency and inflation targeting, so I was very eager to get into the process and to see how the Bank worked from the inside.

Many aspects of the Bank were very positive—I like to see the way the Monetary Policy Committee and the staff work together, for example, on the forecast—but I was concerned about some aspects of the modelling and the software, as I described in my report. I did think there were ways in which the use of the forecast in policy and in communication could be improved, and I made those suggestions.

Chair: So was it quite a surprise to find that your recommendations ended up being as extensive as they were?

Dr Bernanke: Yes, to some extent—certain parts. Again, I did have some concerns about the underlying infrastructure.

Q3 **Chair:** Your terms of reference were clearly published. Were you able to access some things that the public are generally not able to access? For example, the Monetary Policy Committee usually waits eight years before they publish transcripts of their meetings. Were you able to see some of the more recent transcripts?

Dr Bernanke: I was not able to see transcripts; I did not request to see transcripts. In general, I got very good co-operation, both from the Court and from the independent evaluation office, which provided me with whatever I asked for and did studies at my request as well.

I also attended an entire policy round. I attended the staff meetings that go into making the forecast, I attended the meetings where the staff and the MPC discuss the economy and the outlook, and then I attended the actual policy decision meetings that were held by the committee.

Q4 **Chair:** Was there anything that you did not have access to that you would have wished to have access to?

Dr Bernanke: No, I found the Bank to be very co-operative. I dealt primarily with the independent evaluation office, whose role is to make sure that the Bank is operating as well as possible. But I would also say that my meetings with the Governor, the members of the committee, and the staff leadership and membership were all very open and very useful for me.

Q5 **Chair:** Thank you. The Committee wrote to the Chair of Court to request this independent review. We were very concerned, on behalf of our constituents, that inflation had become so out of control in the UK and so embedded in the economy for a long period. That was very painful for our constituents, and inflation is only now coming back closer to where it should be. If your 12 recommendations had been in place at the start of this bout of inflation, could we have avoided what we have just gone through?

Dr Bernanke: It is very important to understand that the shocks that set off the inflation were global. They were related to the pandemic, to the policies responding to the pandemic, like lockdowns, to the Ukraine war, to the oil price and food price shocks, to the disruption of supply chains, and so on. All these things were faced by all the market economies, all of which have experienced inflation. Avoiding inflation entirely would have been impossible without throwing the economy into, essentially, a depression. So significant inflation was unavoidable, and every country—every market economy at least—experienced that.

Now, if my proposals had been in force, I think the committee would have had some useful tools to think about how to respond to the inflation. They would have perhaps understood better the modelling aspects and so on. That being said, in a situation like we have had, judgment is very important, and I am sure the committee—without as much support as they would have liked from the econometric side—applied their judgment and their insights into making policy. So I cannot say, and it was not part of my remit, whether monetary policy in the UK could have been significantly better, or worse for that matter.

To summarise, significant inflation was inevitable. Whether or not the MPC could have done better, given what it knew at the time, is not something I can give you useful information about.

Q6 **Chair:** Can we divide the period into two phases? The first phase was when the economy was rebounding after the lockdown and the pandemic, and pressures in supply chains took inflation, observably, up to 5% or 6% before Ukraine was invaded. Then there was the phase where we had the energy price shock after Ukraine was invaded. Do you think one of the assumptions that was made was that the price shocks in that first period were transitory? Is that something that your recommendations, if implemented, would have prevented?

Dr Bernanke: I am not sure they would have. It is very difficult to tell when a supply shock is coming and how long it is going to last. For example, on the oil price shocks, markets, which invest billions of dollars in trying to guess what oil prices are going to do, had no inkling that the increases in oil prices would last as long as they did. I think the central banks, in general, made a collective mistake in thinking that the supply chain disruptions would be taken care of relatively quickly by profit-maximising firms, who would find replacement inputs or alternative ways to make their products. In fact, the supply chain disruptions took a lot longer than most people—including, again, experts in the field—thought they would.

This was a unique situation, and I doubt that my recommendations would have had a great deal of benefit, except to say that I do recommend very close attention to the supply side of the economy. The Bank of England did look at, for example, the evolution of the pandemic, and they looked at the evolution of supply chains. I guess I would just re-emphasise the importance of that, in that inflation can come from either the supply side or the demand side of the economy.

Q7 **Chair:** We have been quizzing Bank decision makers on some of these issues throughout this whole period, and we rather resent the characterisation of some of these lessons as being learned only with hindsight, because I think there were contemporaneous, clear concerns about inflation pressures. One of the things we also asked about—I am very interested that you included it in your recommendation 4—was that implicit in the Bank's forecast was an assumption that longer-term inflation expectations are always well anchored, and you have specifically asked them to remove that implicit assumption. Can you elaborate a little more on that?

Dr Bernanke: I did. The COMPASS model has that property that inflation expectations in the long run are always well anchored to target, which has the property that, if you believe the model, inflation will return—not necessarily immediately, but over time—to 2%. That is a shortcoming of the model and one that I recommended be fixed in a revamped version or in a new model. What I do not know and cannot answer is whether the committee took that prediction seriously at the time and whether it affected their willingness to respond to the inflation shocks.

I am sure, and I know from my time at the committee and from reading the monetary policy report, that they paid a lot of attention to empirical measures of inflation expectations of both households and business and from financial markets, so I do not think that they ignored inflation expectations. There is a consensus among macroeconomists that a credible central bank that maintains inflation expectations in the long run close to target will have greater success in returning inflation back to target.

Q8 **Chair:** You have just implied that there was something that might be characterised as groupthink going on among central banks in all the major economies during this period. Do you think that would be a fair characterisation? Do you think central banks should ever use the word "transitory" with regard to inflation?

Dr Bernanke: On groupthink, it is true that the major central banks came to the same general set of conclusions, but not exactly: the policies were modestly different in some respects. It may be groupthink, or it may simply be that the preponderance of the evidence suggested that, for example, supply chains would heal faster than they did. Again, it was not something that central banks had a lot of experience with, so it was difficult for them to make a judgment.

It is sometimes appropriate to say that inflation is transitory, because sometimes it is. If you have an energy price shock, for example, or a one-time shock that stabilises, you will see inflation pop briefly then return to normal almost by itself. In fact, that is what happened on a number of occasions, even once when I was chair of the Fed, and the standard of prescription for that is that when you believe the inflation burst is transitory, you should not respond strongly to it, because it will go away by itself and you do not have to slow the economy in that respect. The difficulty is that you do not always know whether a given increase in energy prices, say, is just a one-time thing that will go away, or whether it is the beginning of a series of shocks.

In this recent episode, we had not just one but really a long series of shocks going from mid-2021 all the way through mid-2022, and on food as well. Both those sets of prices had important direct effects on inflation and also affected inflation expectations. People saw higher gas prices, so they said, "Inflation is a problem and I'm going to ask for higher wages." In this case it was not transitory, and the Federal Reserve in particular admitted that, but ex ante—before the event—it is a difficult judgment to make. It is not necessarily groupthink that people looked at similar evidence and came to similar conclusions.

Q9 **Chair:** What about the recency bias implicit in the fact that this was an energy price shock after the invasion and there was no data in the models, as I understand it, going back to the previous energy price shock? Arguably, the decision makers themselves had not lived through an experience like that in their careers either.

Dr Bernanke: It is true that the models are not estimated on data from the 1970s and 1980s, and I think that is justified by the fact that the economy has changed—the structure changes. Also, the data are not necessarily available or internally consistent over a long period of time. Estimating the models using more recent data is defensible, I think, but it is also important to know a lot about the '70s and '80s and get the lessons from that period.

I wrote a book recently called "21st Century Monetary Policy". It was about post-2000 monetary policy, but I had a lengthy chapter on the '70s and '80s that asked, "What are the lessons of the '70s and '80s that we could apply here?" One of the main lessons, as I have already talked about, is the importance of keeping inflation expectations well anchored. In the United States in the 1970s, inflation expectations were completely unanchored and people did not know where inflation was going to go. You had index contracts that would automatically raise wages with inflation. The central bank did not take responsibility for that. Arthur Burns, the Governor of the Federal Reserve, said that this was a fiscal problem, not a monetary problem.

I think any good policymaker—I am sure this includes the members of the MPC—would be aware of those lessons and would be trying to apply them in the context of the current situation. That is not the same thing as saying that you should include all that data in the model, but the lessons and general conclusions were very important to understand.

Q10 **Chair:** Finally, would you describe any of the things that you discovered at the Bank of England to be indefensible?

Dr Bernanke: No. Central banking is a difficult job: the world is complicated and it is very difficult to forecast what is going to happen, as you can imagine. Again, the concern I had was primarily with the infrastructure, and I do not really know exactly how some of those problems arose. I believe part of the issue was that the Bank was very much engaged in putting out current fires and dealing with the current issues, as well as the criticism coming from Parliament and the public. It did not devote enough time to the maintenance, the updating and the work on the infrastructure. Is that indefensible? I think it is understandable, given what they were faced with, but I believe that was an important finding. I think improving that situation is important for the substantive changes in policy and communication for which I have advocated.

Chair: Thank you. That is the end of my questions, so I am going to bring in my colleague Anne Marie Morris.

Q11 **Anne Marie Morris:** Thank you very much, Dr Bernanke—you are being helpful to us in our inquiry today. If I may, I would like to drill down a little further into the role of the forecast, and particularly its position in the policy decisions that are then made. In a footnote in your review, you raise the question of "whether the forecast is an input to the policy decision or a joint product with the policy decision". What did you mean by that, and why was that significant?

Dr Bernanke: That was language that I heard, which I was trying myself to understand. What concerned me a bit was that, with the forecast and the decision, it seemed that the phraseology suggested that, at least sometimes, the forecast and the decision were being made jointly: "Here's what we want to do on policy. How do we explain it?" Those decisions were made together at times, but again this is just my reading of this phrase. If that were the case, while I think that the forecast is an important part of communication and is important for the Bank to explain why it is doing what it is doing, it is also important for the forecast and its elements to inform very basically the decision itself. I am not saying it does not—I am sure that it does—but it is important.

I feel that the single forecast—the idea that there is going to be one central forecast and no consideration of alternatives, for example—is not the most useful way to make the policy decision. In practice, there is a lot of judgment and personal decision making, but the forecast should be first and foremost an input into the decision, and secondly—and importantly—part of the explanation of a decision.

Q12 **Anne Marie Morris:** That is helpful, Dr Bernanke. You make a number of comments about the nature of the publication of the forecast. You have concerns about transparency and about the level of detail, particularly when we have quantitative as opposed to qualitative evidence. One of your recommendations is that there should be less of the quantitative and more of the qualitative. I think you were effectively making the point that there should be more scenarios. For you, what does "good" look like, and why does that matter?

Dr Bernanke: The MPC relies very heavily on the central main forecast, but there are problems with the forecast as a communication device. First, as I talk about in the report, the forecast is conditioned on some given assumptions, such as the market rate path or the fiscal policy of the Government. At times, if the committee does not believe the conditioning assumptions, it will end up making and releasing a forecast that differs from its own view of the economy, which is just confusing to people. That is a problem.

Another problem is that, as I said earlier, a single forecast is not in itself enough information to explain a policy decision. You have to think about, "What if I did something a little bit different?", for example. By focusing on one main forecast, the Bank is not as transparent as I would like in explaining why it took the rate decision it did.

Also, the great deal of quantitative detail, while it is transparent, can be confusing to people because it seems to suggest that there is a lot more precision and knowledge than there really is. Forecasts are very uncertain. While the monetary policy report talks about uncertainty, it is important not to give the public the wrong impression that we know exactly how the economy is going to evolve.

The thing about alternative scenarios is that they give you a different way of looking at what might happen. If I am giving you a forecast, I could also say, "Well, this assumes that oil prices will stay where they are. What happens if they get much higher?" An alternative scenario would show you how the economy would move in that case. If that is your concern, and that is the risk you see, you would take that into account. What happens if inflation is more persistent than we think, which is a problem that the MPC has wrestled with? An alternative scenario will show you how the forecast would change if you believe that inflation was structurally more persistent than is being assumed in the forecast. And how do you explain forecast errors? An alternative scenario could say, "What if we assumed something different about some key parameters in the model? Would that give you an explanation of why we made the forecast errors we did?"

A heavy emphasis on a single forecast creates a sense that there is too much knowledge and too much certainty about what is going to happen. At the same time, it does not give you a sense of what the alternatives are—how policy could be different; how the economy could be different—or a rich enough view of how the policy decision is made.

While much of the detail in the forecast is very useful—I should say for your information that the Bank of England puts more weight and more information on the forecast than any other central bank—it would be better to downplay the forecast a bit and, as you say, use more qualitative information: "We think growth is going to be strong or weak; we think the risks are high or low," rather than saying, "It's going to be 0.5%," because we do not have that kind of precision.

Q13 **Anne Marie Morris:** Do you think that the reason the Bank has chosen to do it this way, historically, is that they feel more secure in relying on just putting out data—the quantitative information, if you like—rather than putting forward the qualitative opinions they have, which are opinions? Are they concerned or potentially worried that if their opinions are there, they are vulnerable?

Dr Bernanke: In fairness, they do discuss qualitatively some of the factors—in the minutes, for example. If you look at the monetary policy summary, which is about twice as long as the average policy statement, the first part of it is all numbers. That is okay for people who like numbers, like me, but the problem is that it gives the impression, first, that the forecast is perhaps more precise than it really is, and secondly that it is the main factor determining the policy decision. It is not. Besides the forecast, there are risks and uncertainties to the forecast, and there are other issues that come into their decision. It is not intentionally misleading, but it gives sort of the wrong impression that the whole decision is tied to the forecast. It is not. The forecast is only one part of the decision process.

Q14 **Anne Marie Morris:** Finally, do you think that if we took the approach, as other central banks do, of providing a shorter, more concise qualitative and quantitative policy decision, we would be helping those who rely on that information to make their own decisions, rather than making them concerned because there is not a nice, easy quick-win fix: "This is the answer; that is what you need to base all your decisions on going forward."

Dr Bernanke: The extreme alternative is the Federal Reserve. If you look at the Federal Reserve statement, there are no numbers at all. It will say, "Inflation is elevated. We have confidence that it will come down"—very, very qualitative. Maybe there is a middle way, where the Bank gives some sense of quantitative information about how it thinks the economy is going to evolve, with appropriate caveats about the uncertainties of forecasting and the like, but also, as it has done at times, gives a more qualitative and general description of what it sees as the risks, what it sees as the general course of the economy, what its strategy is and what it thinks is the best way forward in terms of rates to get back to the inflation target.

Anne Marie Morris: Thank you very much.

Q15 **Dame Siobhain McDonagh:** In your review, you outlined that policymakers at the Bank of England are generally much more involved in producing forecasts in comparison with the US, Canada or New Zealand. Do you think that that is an issue? Do the policymakers meddle too much in the forecasts?

Dr Bernanke: Central banks differ. The two main central banks—the Fed and the ECB—do not have committee involvement in the forecasts. The other central banks we looked at have at least some degree of involvement. Personally, having witnessed this round, I think the involvement of the MPC in the forecast process is broadly constructive. First, it is a way in which the members of the committee can, over a period of weeks, ask questions, learn about the economy, ask the staff to come back with new information if they are still questioning things, and have a debate among themselves, so I think it is useful for them in making their decision.

On the forecast itself, of course the MPC members are experienced policymakers. They come from different walks of life and have different backgrounds. Although it is a testable hypothesis, from what I saw they added something to the forecast process. Some of the decisions that I made about what to recommend were aimed at preserving that process. I think it is a strength of the decision-making process at the Bank of England, and I would not want to see that go away. The reason that the Federal Reserve does not do that is that the Fed has a very large—about 19 people—and very geographically dispersed policy committee, and it is simply not practical for them to come to Washington three weeks in advance of the meeting and have detailed discussions with the staff about the outlook.

I do think that you want to keep that part of the process. While it is not perfect, it allows the members to learn, ask questions and sometimes make useful insights and inputs to the forecast process. It is important to keep checking to make sure that there are not groupthink issues, as people have talked about, but I think that policymakers are, for the most part, well-informed people and they do bring something to the forecast process.

Q16 **Dame Siobhain McDonagh:** You have also criticised incrementalism in the way the Bank produces its forecast. You described how the starting point for each forecast has always been the previous round, which is then built on. Do you think that that leads the Bank to miss dramatic structural changes in the economy because it is too focused on minor adjustments? How do you think the Bank should remedy that incrementalism?

Dr Bernanke: Yes, that does concern me. The practice that I saw was that the staff takes the last forecast, looks at the data that have come since that forecast was made, and then makes relatively modest changes to the forecast. In general, forecasts should not be jumping all over the place—normally the economy is relatively smooth, but there are times when you are simply barking up the wrong tree. You are making a mistake, and you really should be thinking about the basic structure of your analysis.

From a technical point of view, what I recommend is that they do, on a regular basis, a quantitative analysis of their previous forecast errors and try to determine where they came from. Alternative scenarios happen to be one way do to that. That would give them some insight into what went wrong the last time and whether some major changes are needed.

In terms of actual process, I think what this boils down to is that there ought to be a regular series of meetings, presumably at some point involving the MPC as well, where we ask the question: are we leaving out something important? Are the judgments that are made by the MPC disguising underlying problems? What changes should we be making? In a world, particularly a world like we have had, with a great deal of uncertainty, it is important that you do not smooth over those uncertainties, but that you confront them. One of the things that I have really advocated in my review is a regular process of looking at forecast errors, trying to divide them into their components and asking the question, "Why were we wrong? Is it something we could have known? If not, what can we do to solve that problem?"

Q17 **Dame Siobhain McDonagh:** The review also talks about how the Monetary Policy Committee takes collective ownership of the forecast. Do you think it leads to a lack of dissenting opinion and prevents a diversity of perspectives?

Dr Bernanke: Frankly, when I first came I was a little confused—perhaps to some extent I still am—about the idea that on the one hand the decisions and the forecast are "the best collective judgment" and on the other hand you are supposed to emphasise individual responsibility. I just found it hard to understand how those two things go together, because sometimes people disagree about the forecast, for example.

Overall, though, it is important to say that if you compare the Bank of England with the Fed, the ECB or most other central banks, there are more dissents, there are more negative votes and there is more disagreement. You have got the external members, who may not even be British. I think that they take the individual responsibilities seriously. As a result, you sometimes even get—as has happened in the past—the Governor being outvoted on a policy decision.

I think the collective judgment idea is a little bit unclear. I would think that a better description of how they actually function is individual responsibility. Each member wants to work collectively, of course, but they also feel a responsibility to justify their own vote and their own view on the economy.

Q18 **Dame Siobhain McDonagh:** Your review lays out how the MPC members are very closely involved in the forecast process and even negotiate with themselves before an agreement is reached. Can you tell us a bit more about the negotiation? Is it a case of MPC members squabbling over each other's predictions?

Dr Bernanke: No, I think squabbling is the wrong word. I would make two comments.

First, it is basically an intellectual exchange. One member might believe that a certain factor is very important and should be considered; another member might say that it is less important and should not be part of the forecast. There are debates, just as you would see a debate in a conference or seminar room at a university, for example, which overall is a healthy thing.

The other comment I would make is that the decisions and the debates that occur often extend over several meetings. That is something that I found in the Federal Reserve, where a member would say, "I think we should raise rates," and most people would say, "No, that's wrong." The person who made that argument would not necessarily vote to do it; rather, they would hope that over the next meetings their arguments would begin to gather force as the evidence came in and eventually the committee would swing in their direction. You see certain members who make a similar argument over and over again. What they are trying to do is move the committee in their direction. They may not feel adequately motivated to actually vote for a different rate decision; they might, but what they are trying to do is win an intellectual debate within the committee. I do not think there is anything unhealthy about that.

On this concern about groupthink, I think it is important that people come with their own independent opinions and bring their own points of view into the policy discussion.

Q19 **Keir Mather:** Thank you for taking the time to appear before our Committee, Dr Bernanke. I would like to turn to issues around forecasting policy decisions and exploring communicating risks in forecasts.

The Governor made it clear that he sees the changes that will follow your report as a once-in-a-generation opportunity to reform the Bank's practices. Your report states that incorporating the MPC's own projections of Bank rates into the forecasts would be "highly consequential", but that it is best left to future deliberations. Are you concerned that by missing this once-in-a-generation opportunity to address the question now, the Bank might be depriving itself of an opportunity to meaningfully reform its practices for the better?

Dr Bernanke: It is a very important issue whether or not the forecast includes the projection of the committee for where rates are going to go. Some central banks already do that. I knew that even if I made a formal recommendation, there would have to be a debate about it, because it is very consequential. On whether I should have made it formal or not, I think probably not, and I will explain why.

It is not a slam dunk. On the one hand, putting out your own rate projections, as Sweden, Norway and New Zealand do, has some definite advantages. One advantage is that it means that the rate projection is consistent with the forecast: you do not have this problem of having to tie the forecast to the market rate. That is a very useful thing. Another advantage of having your own rate projections, besides the general transparency, is that it provides forward guidance to the markets—just like at the Federal Reserve, for example, you are saying what you think the rate is going to do over a period of time, and that helps the markets think about how to price financial assets.

There are some advantages to doing it, but frankly there are also disadvantages. The approach is often controversial in many countries. One of the disadvantages in the context of the Bank of England is simply logistics. You have nine people, including four external members; the question is "Could they decide collectively on a rate projection early enough in the process that it would be usable in the forecast that the staff present?" It is not obviously clear that they could. Sweden or Norway, for example, have smaller committees, with five or six people and often a Governor who makes the key decision. At the Bank of England, you have nine independent people, including four external people—it might just be harder for them to do this effectively. That is one practical question.

In other countries—the United States and elsewhere—it is true that the rate projections give powerful forward guidance: they tell the markets where the central bank thinks the rate is going to go. There are times, however, when the committee may not want to give such powerful forward guidance. There might be a situation in which there is a lot of uncertainty about the economy or about policy. I know that at times the Federal Reserve has had to give guidance that perhaps it did not want to give.

I don't think it is a slam dunk. I think it is definitely something worth looking at, and I would be disappointed if the Bank did not seriously review the possibility at some point in the next couple of years. I have told the Bank that I would be happy to continue to advise and consult to the extent that that would be useful, and of course it is something that I would be interested in observing.

Q20 **Keir Mather:** How does your aspiration on this front—for the Bank ideally to crack on with investigating this question properly in the next few years—square with your perception of how Governor Bailey and the senior Bank leadership look at the question?

One thing we are trying to ponder is what "once in a generation" actually means. Does it mean that we will have a set of reforms resulting from your reports and the question of incorporation of projections into the forecast will come further down the track? Or is it something that you have, in a sense, fired the starting gun on, and that you think Governor Bailey and the senior Bank leadership will want to make progress on in the near future?

Dr Bernanke: From what I have heard, they are eager to get going and to do as much as possible. We had a very positive Bank reply—an official document. I have gotten very good assurances from both David Roberts, the Chair of Court, and from the Governor. In Washington the other day I happened to meet Clare Lombardelli, who I think you have met at this Committee. She will be the new deputy Governor for monetary policy, who would have a leading role in implementing these reforms. She expressed very strong enthusiasm to me about doing this and making sure that things get done.

Of course, institutions are complicated, but I think that there is a lot of interest at the Bank, among the leadership and also at the level of the staff—I made a presentation of these issues to the staff as well—in implementing these changes, including discussing the one you raised about rate projections.

Q21 **Keir Mather:** You observed in your report that the Bank's practice of incorporating only officially announced fiscal policy, rather than likely policy, has led to significant forecast errors in the recent past. I am wondering whether you could elaborate on what the solution to this might be. We are, of course, in an election year, and parties across the political spectrum will have different projections and announcements in relation to fiscal policy. Is it right that the Bank takes these pronouncements into consideration, or is it simply too politically sensitive for the Bank to carry out this work?

Dr Bernanke: It is a very difficult problem. The UK is very different from the US. In the US, the President's budget is simply a starting point, and fiscal policy is developed over a period of months through negotiations. Often it resembles not at all the original budget. In the UK, with a parliamentary system, what the Government put out normally is close to what is actually implemented. The Bank is very sensitive—I understand this—about putting into their models fiscal programmes that have not yet been announced, even if they are likely to be announced by the Government. The question is what to do about that.

I was asked about resistance. I did feel that there was a great deal of anxiety, including from the Treasury representative, about the Bank making its own independent forecast of fiscal policy and thereby front-running the Government.

What can be done about it? Well, I would say several things. One is just to de-emphasise the overall forecast. I think that will reduce the problem that we saw recently when, for example, the Bank simply did not include the energy subsidies in its projections.

A second thing to do is use the flexibility that they have. They have some flexibility. For example, if the Chancellor or someone like that gives a speech saying, "We plan to do x, y, and z, and here's a few details that may be worked up," it would be appropriate in that case for the Bank to say, "We are making a working assumption that fiscal policy will do X, and that will be what we put in our forecast."

Whatever they do, they need to be very clear. I do not want to fault the Bank on this, because if you look at the monetary policy report, they repeat the conditioning assumptions over and over again, but what I heard from media people was that the average person in the street says, "The Bank's forecasting a recession," or the Bank's forecasting whatever, and they do not take into account the fact that it is making strong assumptions about the fiscal policy.

Finally—just one last quick comment—the period of the pandemic involved some very unusual and strong fiscal actions, like the energy subsidies or the furlough scheme. Hopefully, going forward they will be less frequent, and this perhaps will be less of an issue but because of the fiscal assumptions, if the forecast does not fairly represent the committee's view, it is important that that be conveyed to the public and the media as clearly as possible. Otherwise, the Bank's reputation will take a further hit because of its miss in the forecast.

Keir Mather: Thank you, Dr Bernanke.

Q22 **Chair:** It is so interesting. What I am hearing you say is that there is more of an argument in favour of using the market projections—what the bond markets are pricing in. The bond markets are much more likely to be pricing in correctly what the fiscal expectations are, so might be in favour of their use of the actual bond prices for their forecast.

Dr Bernanke: It is important that the rate projections that are used, whether they are the market ones or those done by the committee, are consistent with the other aspects of the forecast, such as the fiscal policy—you are absolutely right about that. The problem is that the rates are very much conditioned by what the markets think the Bank is going to do.

Suppose the markets think the Bank is going to be very hawkish, for some reason, and the members think it more likely that there will be a somewhat more doveish policy coming down the road. The rates will be too high relative to the expectations of the committee, and therefore the committee will be forced to forecast a very weak economy or recession because of the high interest rates. That is just confusing to people and does not represent the true view of the committee.

There is not a simple solution. The best solution is probably to have their own projection, which would be consistent with their other assumptions. As I mentioned, there are some logistical and policy-related concerns about that.

Q23 **Keir Mather:** Thank you very much for those comments, Dr Bernanke. In this Parliament, one of the intriguing situations we have ended up in is that Government Ministers have said that they have an intention over the next Parliament to make progress on abolishing national insurance, but they have been unable to give any consideration as to funding or timescales for that decision. Is that the sort of policy decision—seeing as it has been stated at the Dispatch Box as an ambition by Government Ministers—that you think would fall under the Bank's role of being able to scrutinise as a fiscal policy decision?

Dr Bernanke: I think it would be difficult for them to do that, because it is seen as very vague, and the timeframe is very vague. It is fortunate that, from a forecasting point of view, that is not something that is likely to happen, presumably, in the next few quarters—presumably that is a long-term projection. But this is the kind of thing that the Bank worries about. If they do a projection assuming a tax cut and they do another projection assuming no tax cut, and people compare the two forecasts, it basically amounts to an endorsement or non-endorsement of the Government's policy, and that is something the Bank does not want to get into, for reasons you surely understand.

To answer your question, I think that would be somewhat vague—too vague. Even the Federal Reserve, which does try to forecast fiscal policy, usually aims primarily for the next few quarters, not three or four years down the road.

Q24 **Dame Angela Eagle:** Dr Bernanke, you talk about and recommend the production and publication of selected alternative scenarios in the monetary policy report. This will entail additional resources, some of which might be drawn from those that are currently doing the central forecast. What benefits do you see arising from this? Also, what do you think this may cost, in terms of resourcing the Bank appropriately to make some of the changes you have recommended?

Dr Bernanke: On the resource side, let me just say that in my experience of the Federal Reserve, the staff will normally do a dozen alternative scenarios without blinking an eye, basically. The idea of an alternative scenario is that you take the main forecast, and you just change one button and run it again.

The infrastructure ought to be of a type where rerunning the forecasts with a couple of changes is a fairly automatic process and should not be very expensive—other than just trying to do what they should do anyway, which is to have a system that works in a more automated way and involves less manual movement of data and so on. To answer your question, I do not think it would be expensive at all, and they have of course done alternative scenarios in the past, including the constant interest rate scenario. I do not want this report to be thought of as the alternative scenario report, but there are some important benefits from that particular method. It does help you consider alternative policies.

I would recommend looking at the Swedish monetary policy report, which says, "Here is how we think rates are going to evolve. What would happen if they were higher or lower?" Those are useful criteria for thinking about policy. For evaluating risks, what would happen to the economy if the global economy slows down, and should we take that into account? For evaluating errors or changes in the model or theory, suppose that inflation is more persistent than we thought. What difference would that make? An alternative scenario allows you to look at that.

Finally, it provides a method for saying, "If we made a different assumption, would we have gotten a smaller forecast error?" It is a way of testing what potential problems are generated in the areas they are seeing. So there are a lot of uses for it. Again, I do not want it to be the only thing that comes out of the report, but it is something that they should be able to do given a well-functioning infrastructure. They have already done some of it, and from a financial point of view I do not expect it to be a major burden.

Q25 **Dame Angela Eagle:** Do you think that those who have to read the runes in these areas—not just those in the City but those who are deciding what the likely future path of the UK economy would be—would start second-guessing particular scenarios and why they were picked? How could you ensure that the wrong signals or confusing signals were not sent? It would have to be quite carefully explained in the communications, I think. Do you agree?

Dr Bernanke: I think you are right, and I would like to forecast that whatever the Bank does, people in the City and the media are going to complain. All changes are bad, so there will be complaints.

Dame Angela Eagle: Sounds familiar to any parliamentarian in the room.

Dr Bernanke: Transparency is what the Bank of England professes to do, and it helped to lead the transparency revolution in the 1990s. The idea of transparency is explaining to the public how the decision was made, but the forecast by itself does not give that information. If you see inflation rising, that means you should have tight policy, but it does not tell you how tight or for how long. The alternative scenarios can give you some of the other information that is relevant, including things that market participants care about, like the reaction function—how the Bank would respond to different kinds of shocks, for example.

Again, we are not going into uncharted territory here. If you look at what some other central banks do, you see that they already use alternative scenarios quite heavily and that they are useful. It will take some time and education, but I think that ultimately they will be a part of a toolkit that will be useful.

You mentioned signals. I did say that the MPC ought to select which scenarios to include in the MPR. Part of that is to say, "Here's what we think is important. We don't want to do every single little one that we did—there are some that didn't show much; there are some that were kind of obscure—but here are the two or three that really influenced our thinking about risks and the dangers of being too tight or too easy." I think it can be a useful form of communication: "Here's what we were thinking and why, quantitatively."

Q26 **Dame Angela Eagle:** Might it also turn into some warning about fiscal judgments that the Government might make, which are meant to be made by the Chancellor, not the Governor?

Dr Bernanke: Well, I suspect that there would be very few, if any, scenarios with alternative fiscal scenarios, and for exactly this reason.

Dame Angela Eagle: So you are thinking much more in terms of energy prices or what is happening in the global economy in terms of slowing down or speeding up or growth—that kind of thing.

Dr Bernanke: Those are leading examples, yes.

Q27 **Dame Angela Eagle:** Okay. You noted deficiencies in data and modelling infrastructure at the Bank, particularly with the COMPASS forecast. You also had some things to say about staffing, which you identified ought to be made stronger. Do these deficiencies have to be put right before alternative scenarios can routinely be published, or do you think that the Bank could routinely publish alternative scenarios now?

Dr Bernanke: I think they could begin, but there are some points besides the two things that you mentioned. The data is particularly important because, as I mentioned, you would like to be able to do an alternative scenario with a touch of a button—that ought to be automated. Currently, the software that takes the data out of the database and applies it to the models and so on is not automated; it is very clunky. That would be one thing that would slow down the calculation of alternative scenarios—not eliminate it, because they have done them before, but slow it down.

The other thing, which is more of a problem, is that there needs to be some substantial thinking about the basic macroeconomic model—the COMPASS model.

Dame Angela Eagle: Yes, from reading your report it seemed that you were you were not exactly enamoured with it—let's put it that way—as a forecast model.

Dr Bernanke: Well, I was frankly reflecting what the staff told me. They said, "We basically don't even use it any more. We use it just to keep track of the national income accounting identities; we don't use it very much for economic analysis." It has a number of defects. I gave a list of things that I think ought to be included in a revamped model, or a new model, and getting that done and completely tested out is not something that can be done overnight.

Q28 **Dame Angela Eagle:** Finally, Dr Bernanke, there are those on the right of the political spectrum who wish to end Bank of England independence completely and return the rate-of-interest decision to the Chancellor in the Treasury. What do you think that would do to the credibility of UK economic decision making and the Bank of England?

Dr Bernanke: It won't surprise you to hear that I think that that would be a terrible mistake. We talked about the 1970s. I think that the main lesson of the 1970s was that the Fed's chair, Arthur Burns, was very much a colleague, friend and personal supporter of President Nixon, who applied pressure on Burns to keep easy money so that he could be re-elected, and that was a major contributor to the de-anchoring of inflation expectations and to the inflation issues that we saw in the 1970s.

The experience is that an independent central bank that can avoid short-term political pressure is more likely to be credible with the public and able to reach its inflation target at a lower cost, and will just generally be more effective. The Chancellor might be very competent, but inevitably the Chancellor is a political appointee who is responsible to the Prime Minister. You have the risk of, "An election's coming up: why don't we ease policy a bit and get a bit of a surge?" It is a very strong consensus—it is not just my view—that independence is very important for a credible and powerful and effective central bank.

Dame Angela Eagle: Thank you, Dr Bernanke.

Q29 **Danny Kruger:** Dr Bernanke, I have one more question on the model and the way the central forecast is presented by the Bank. They are very keen on their fan charts, and you are quite critical of those in your report.

We have just been discussing the suggestion for a series of scenarios. Do you think there is a way to make these fan charts reflect the need for some sort of quantitative account of what the scenarios might be, assuming we stick with using numbers at all, while improving the way they are calculated? Can we do that in a way that might actually achieve what you are describing—giving a little more texture to the scenarios people should consider when they think about what the forecast is? Do you think fan charts can be made to work in any way?

Dr Bernanke: I am sceptical. The way it should work in theory is that the committee or the staff run a large number of scenarios—50 or 100—and figure out the implications of each one for inflation, unemployment and growth. They would then have to assign a subjective probability to each of these scenarios: "We think the chance of the oil price shock scenario is 3%." That would allow a rigorous calculation of fan charts.

Failing something like that, I don't see it. The way fan charts are calculated now is basically by sheer guesswork, frankly.

Q30 **Danny Kruger:** As you say, it requires somebody to make a qualitative judgment, and for that then to be translated.

Dr Bernanke: Of course there is judgment, but my point is that the elements of that decision could just be presented directly. What goes into that decision is, first, the historical forecast errors and, secondly, the qualitative judgments made by the committee about the risks and uncertainties. Why not simply state, "We think the risk to inflation is mildly to the upside; we think the risk to output is mildly to the downside"? What benefit is there to making it artificially quantitative?

The other thing about it is that it is supposedly a teaching device. It is supposed to be a way of helping the public understand that the forecasts are very uncertain. The fan charts are very, very wide; the possible outcomes are enormously wide.

Other than simply telling people, "We have a lot of uncertainty," I am not sure that the fan charts really add much to the public's understanding of that issue. When we talked to media people, I didn't find anybody who said that they ever put a fan chart on the evening news or in their newspaper story. They were very sceptical that there was a great deal of attention. The fan chart does show the modal path—the middle path, which is the most likely—but that of course is shown directly as the forecast of the variable.

Q31 **Danny Kruger:** I find that very compelling. Thank you very much.

You mentioned earlier the importance of keeping inflation expectations well anchored and said that the public should have a clear understanding of what the authorities think is happening there. You also mentioned wage inflation as a significant factor in the recent bout of inflation that we have had. Given its significance, and given the importance of clear communication, do you think it was wise of the Governor here to have encouraged people not to ask for a wage rise during the recent inflation bout?

Dr Bernanke: I think that is more of a PR question. I don't think it is—

Danny Kruger: Forgive me. I am not trying to invite you to criticise the Governor; I am asking whether it is appropriate for central banks to try to influence inflation by discouraging wage demands.

Dr Bernanke: I think I am going to take a miss on that. There are examples in history: JFK, for example, urged the steel companies not to raise their prices and so on, but it is not the normal practice. The normal practice now is simply to work through the tools of monetary policy, but there are examples in history of similar things. Again, I want to emphasise that, although I have looked at some of the communications episodes in the recent period, evaluating monetary policy—and I guess I would include that kind of communication—is really just not part of my report.

Q32 **Danny Kruger:** Understood. Forgive me for exploiting the fact that you are in front of us just to ask a few questions about policy more generally. You mentioned earlier that most central banks took broadly the same response to what was happening in the pandemic, and then the price shock after the invasion of Ukraine. Which central bank had the best pandemic and Ukraine war response in recent years? Which banks would you point to as having performed best? That could possibly be in terms of your remit and the forecasting model—you mentioned Sweden. Which performed best, either in terms of broad policy or just in terms of the best policy on forecasting?

Dr Bernanke: I show a picture of the rate policies of the different central banks, and they look qualitatively quite similar. The Bank of England was one of the first to raise rates, actually, among the seven that we looked at. But the basic strategy, the basic approach, was the same across the central banks that we looked at: they all—again, we discussed this earlier—made the bet that oil shocks and supply chain problems would diminish over time instead of being more persistent. I could talk about the types of methodologies, the Bank's forecasting tools and so on, but in terms of their actual policy, I simply do not have the information. It was not within my remit to try to evaluate recent policy.

Q33 **Danny Kruger:** Understood. I have one last question, and you might want to give the same answer, but I would appreciate it if, given your experience and current position as an academic, you could advise on this.

There is one big difference between the Bank of England and other central banks, including the Fed and the ECB, and it is about QT—the unwinding of QE policy. In the US and Europe, the policy is for a central bank to keep hold of its bonds until the price improves, but here in the UK the Bank is selling its bonds, and the result is that the taxpayer is picking up the losses that are being incurred, to the tune of around £130 billion, according to the Bank's own estimate. Is it your view that we have the right policy? There is an indemnity that the Bank has, that it is allowed to pass on its losses to the taxpayer, whereas in the US that does not happen. Do you think we have got that right?

Dr Bernanke: I think it is an accounting difference. The US and the ECB are not selling—they are simply not replacing bonds that mature. The Bank of England is selling. The main goal of both policies is to be as boring and predictable as possible; the terminology used is "watching paint dry". The idea is that by being predictable, you minimise the volatility caused in markets by the QT. Overall, QE and QT create financial risk—it can go both ways. In the case of the United States, the flow of money to the fiscal authorities has actually been quite positive since 2009. But currently the Fed and the ECB are taking capital losses—whether they are realised or not is really an accounting issue, rather than a—

Q34 **Danny Kruger:** It is quite a significant accounting issue for the Treasury though, here in the UK, because it appears as a loss to the taxpayer. This is money that could otherwise be spent by the Treasury on other fiscal priorities.

Dr Bernanke: The loss is the same whether it is a loss in the value of the bonds held by the central bank or a loss in the amount of money that goes to the Treasury. It is still a loss; it is simply not realised. It is a loss whether it is realised or not realised.

Danny Kruger: All right.

Q35 **Stephen Hammond:** Good afternoon, Dr Bernanke, and thank you for giving evidence. A major part of your report is about the failings around the forecasting infrastructure. On page 6 you say, "Some key software is out of date" and "insufficient resources have been devoted to ensuring" that it has been maintained. Later on, you talk about the deficiencies that the staff face in trying to use the data, because the software for accessing it is not good enough.

That leads to three basic questions. First, how surprised were you that a central bank like the Bank of England had these problems? Secondly, how long do you think they were embedded in the system? And thirdly, have you done any assessment of any other central bank's forecasting infrastructure?

Dr Bernanke: On the last, the answer is no, except for my experience at the Federal Reserve. The Federal Reserve is of course a much bigger institution, with a much bigger staff and better resourced than most other central banks, so I doubt they have the same problems, although I was not as personally involved, because of the way the Fed works—the policymakers do not get into the forecast.

I do not know how long the problem has been in the Bank of England. Part of what has happened—this is purely conjecture on my part—is that the Bank has changed its main model. This is the third model it has used. It had two prior models that it used, and I think it has had difficulty in settling on the framework that it wants to use, so maybe that is part of the issue. Another issue, frankly, is the difficulties of the last few years and the fact that there has been an "all hands on deck" kind of feeling about the need to address the current crisis, which is understandable.

On the comparison with other central banks, I have not investigated any other central banks, other than my experience with the Fed. I think it is fair to say that the leadership of the Bank of England is not totally unaware of these issues. Certainly we heard a lot from the staff, which I am sure the leadership is hearing as well, including the chief economist and the like. They are taking some action. As you know, there is a major database improvement project under way, which I have talked about. My first recommendation suggests some things that they should try to achieve with that, but I think there are a number of other important steps, including revamping the basic model, that are needed to get to where we want to get.

Q36 **Stephen Hammond:** I would like to come back to your recommendations in a moment. Out of that answer, may I ask two questions? You talked about the Bank moving between three different frameworks. Do you think it has now settled on the framework? Do you think that this framework overcomes the problems that you identified?

Dr Bernanke: No. To get technical, the Bank switched the type of model that they are using from what is called a semi-structural model, which is a big model like the one the Fed uses, to what is called a DSGE model, which is a small model with so-called new classical properties. It is a different kind of model. I think that this experiment has been disappointing. As I mentioned, the staff told us that they do not really use the central model very much, and that they use what they call sectoral models—sort of side models—to address many of the issues. One of my recommendations is that they revamp the whole process. So yes, my argument is that they are not in a satisfactory place. They need to get to a new structure, and one that is not only operationally better, but better economics that hits the data better.

Q37 **Stephen Hammond:** Notwithstanding your answer to Mr Kruger about where UK central bank performance was in the seven, inflation was tacking well above target. Do you think the forecasting that was coming out of the model prevented the Bank from realising that the trends in place were likely to be structural rather than transient?

Dr Bernanke: Again, I did not evaluate the quality of monetary policy itself over the last period. It is important for the Committee to understand that the MPC does not operate by putting data into a model, taking out the number and saying, "Okay, now we know what to do." That is only one input to a whole process that includes judgment, outside views and so on. I do not think that the model would have been of massive help in the last few years, but that does not mean that the MPC did not use other information, its own judgment and so on to make the decisions they made.

Q38 **Stephen Hammond:** We are definitely aware of how the MPC makes some of its decisions. My question was just about how much they may or may not have been biased by the fact of what the model was saying, especially given that these were particularly uncertain times.

You talked about the fact that there has been an upgrade to the infrastructure of data management, in particular. Did I hear you say earlier that you have offered to stay involved? Has that offer been accepted?

Dr Bernanke: I have not formally made it. Well, in fact, I have made it in an email to Clare Lombardelli, and she said that that would be wonderful. So at least from her, yes. I did not make it in a formal sense.

Chair: You have made it pretty public now, Dr Bernanke.

Dr Bernanke: Yes, my offer is now public. In fact, I mentioned it to the Governor as well. I am sure that they will be happy to have some input from me, although of course the report is what it is.

Q39 **Stephen Hammond:** Indeed. As you rightly say, in your report you make four or five fairly important recommendations. Do you think the upgrade is taking those sufficiently into account? Also, some of us looking at your recommendations might have assumed that that was happening in the first place. Again, there is general surprise that it was not happening.

Dr Bernanke: Again, some of it is happening on the data side, but I had no information, either formal or informal, that the revamp of COMPASS, for example, was under way. So I think there is some important work to be done. I have, for what it's worth, very strong assurances from leadership, including the head of the Court and also Ms Lombardelli, that these are high-priority items. This Committee will, of course, be interested in following the progress.

Q40 **Stephen Hammond:** Indeed it will. I have one last question, which follows on from that. In your report you make the point that it is no good just making the upgrades; the reality is that you have to ensure that the data is continually and regularly re-evaluated and re-estimated. You mentioned that insufficient resources had been devoted to what you looked at. Are you clear, from your conversations with the head of the Court and the Governor, that they now recognise the importance of that re-evaluation and updating process?

Dr Bernanke: I believe so. I would simply point to the official response, which says, "We enthusiastically"—or some other adverb like that—"accept all 12 recommendations." On maintaining the models, it is one thing to get a new model, but once you have it you have to make sure it works right. You have to re-estimate it when you get new data. You have to test it out. You have to road-test it. It is an ongoing process. Certainly it is true at other central banks. I think they recognise that that is an important part of the upgrade that I recommended.

Stephen Hammond: Thank you.

Q41 **Mr Baron:** Dr Bernanke, thanks for joining us and for your input into the Bank's review. You have answered a number of questions about COMPASS—thank you for that.

Can I bring in the subject of money supply and the role it plays in driving inflation? In your list of points and key elements that the revamped forecasting framework requires, I do not see a lot of mention of money supply as a predictor of inflation. Correct me if I am wrong, but I believe Friedman is one of your favourite economists. He argued that a key cause of the great depression was that the money supply in the US had fallen precipitously. Should the new model take greater account of the role of money supply in driving inflation?

Dr Bernanke: There is a two-part answer to that. I implicitly mention the first, because my first recommendation is to look at alternative transmission mechanisms. How does monetary policy work? I think you would argue that one way it works is by affecting the money supply. That would certainly be one of the things that could be considered as part of the re-evaluation. I am not ruling that out.

The other thing I would like to emphasise about the whole report is that I am trying not to be too prescriptive about specific theories and models. For example, I do not say they should use a semi-structural model instead of a DSGE model. What I say is that they should have a systematic and deep-looking method of evaluating the sources of their forecast errors. One thing I would recommend is an ongoing process of saying, "What is missing from our model? What is not working?" Money supply, based on Friedman and so on, would be one variable that would be looked at.

There is a commentary on money in the latest monetary policy report, but going beyond that, you would want to ask the question, "Can adding money to the monetary transmission mechanism in our new model make the model work better or reduce the forecast errors?" I am not taking a position on what role money should play in the new model, but I am certainly not ruling out serious consideration.

Q42 **Mr Baron:** It is good to hear that. While accepting that inflation obviously has a number of causes, there is a neat correlation between money supply and the inflation rate 18 months later—one is looking at data and graphs going back to the early '80s. I suppose I am asking you to make a comparison with the Fed, perhaps. Do you think the Bank of England should place greater emphasis on money supply figures, given that rather neat correlation?

Prior to this very recent MPC report, previous reports over many years had hardly mentioned money supply. It may have got the odd paragraph, but it is only very recently that they have started turning attention to it. Some of us will welcome that. Do you think it is the right decision that they should be placing greater focus on money supply? How does their present focus compare with the Fed's?

Dr Bernanke: Their analysis that we were talking about in the MPR mentions at the end that they do monitor money, and I am sure that they do. It is certainly an interesting variable. Even if it is not causal, it certainly helps to describe what is happening in the economy in general. What I am advocating for the Bank of England—again, I want to be clear that I am not advocating any particular model of inflation or of the economy—is a rigorous approach to looking at alternatives, which would involve serious consideration of alternative theories. That would certainly be one of them.

At the Fed Reserve, I think one problem we found in the US is that, because there is so much financial innovation and so much change in the kinds of checking accounts and so on that are useful, velocity is not very stable. That reduces the predictive power of money, at least in the short run. Of course, over longer-run periods, money has greater predictive power.

Q43 **Mr Baron:** Do you think part of the problem in the past has been that there has been an assumption—not just by the Bank of England, to be fair; it has been central banks generally—that inflation was not a problem, and that if it did rise it was transitory? We have covered that point, I know. Because of sluggish growth, perhaps because of the financial crisis, it became the norm to say that the economy was in sort of stagflation, owing to various imbalances, whether it was trade imbalances or income inequality, and the money supply figures were ignored because perhaps they were an inconvenient truth in suggesting that inflation was picking up.

Dr Bernanke: I will agree, certainly, with the first part of your statement. With no serious inflation for 35 years, it is something that was not at the front of people's minds in 2021. Perhaps that influenced the thinking about transitory versus longer-lived inflation effects. I take that point.

Q44 **Mr Baron:** We talk a lot about external shocks when it comes to inflation, which is perfectly valid, but we had a scenario here where a month before Ukraine, for example, which is often commonly cited as one of the bigger shocks, we had inflation at 6% and rising steeply. Interest rates here were only 0.5%; they were so far behind the curve that we had to have 14 consecutive rises in pretty quick order. I suppose I come back to that point that there was, perhaps partly because of COMPASS, an implicit presumption that inflation would return to target, and that was the basis of the model. The canary in the coalmine was suggesting something else, but it was ignored—the canary being money supply figures.

Dr Bernanke: COMPASS would have reinforced that view, but COMPASS was not the source of it.

I think there was a general view among central banks—including the Fed, as you know—that once the oil price shock had passed through, and once businesses had found ways around the supply chain issues, the inflation would prove to be temporary, and that because it was temporary, and because monetary policy works with a lag, it was wrong to respond to that with a powerful tightening of monetary policy, which would not have any benefit until after the inflation had already passed, and then what you would see is a slowdown in the economy.

So there was a judgment made there. All central banks made more or less the same judgment. With the Bank of England in particular, its path of rates is very similar to others. It moves more quickly than the Fed, among others. That there was a common error there, or at least a misunderstanding of aspects of the inflation—of the shocks—cannot be doubted.

I think there is a problem on the monetary side. I do not want to get too distracted on this, but one issue in the United States at least was that there were some massive fiscal programmes—you know, transfers. Cheques were written to people, and people take the cheque and they put it in the bank account, so that shows up in the money statistics, and sometimes it is a little hard to tell the difference between a monetary surprise and a fiscal surprise, or maybe they are connected somehow. That also makes the decision a little more complicated.

Q45 **Mr Baron:** I was very encouraged to hear what you said about greater qualification being required when putting out forecasts. We all know the quip from Galbraith that forecasting's sole purpose is to make astrology look respectable. It is very difficult to predict human behaviour, let alone external shocks.

Correct me if I am wrong, but I think this is a central plank of your recommendations, certainly when it comes to the Bank of England. They have produced lots of figures at the front, which give a slightly authoritarian demeanour to the report's predictions. Would you agree that we need to have much greater humility, particularly in the central banks, and make it clear that it is a very, very difficult thing to forecast accurately, because of all the variables, and that you need to suitably qualify these forecasts so that when people in the real world are trying to plan, when it comes to investment or their finances, they realise that there are many variables and that to a certain extent they have to take these forecasts with a pinch of salt? Is that unfair, do you think?

Dr Bernanke: No, it is absolutely right. One of the themes of the report is that looking at risks to the forecast and at uncertainties around the forecast, and de-emphasising the central forecast, which is the detailed one that you're thinking of, is the way forward, so I would agree with what you said.

Again, you may not want to go as far as the Fed, but if you read a Fed statement, you will not see a single number. It basically says, "We think the economy has slowed or is not slowing, or inflation is coming down or is not coming down." That might be too far, but clearly what we actually know is more qualitative than quantitative. That's a fair statement.

Q46 **Samantha Dixon:** Dr Bernanke, I want to ask about some of the comments you made in the report about staff at the Bank of England. Your report reveals that only about 45% of the Bank's staff who hold PhDs and work in areas that feed into the forecast spend substantial time or moderate time each year on the forecast or related analysis. In your opinion, is the Bank's management making the best of its staffing resources?

Dr Bernanke: Well, implicit in my recommendations is that I do not think they are, although more analysis is certainly needed.

I want to be clear that I think research is very valuable to the Bank and that the Bank of England's research group is quite good. I frequently rely on research papers from the Bank of England in my own work, so I am not saying that there should be no research or that that should be cut out. I am simply making the point that some of the things that PhDs are trained to do, like estimate models, for example, would be very helpful in doing the work on the infrastructure that I have talked about.

Perhaps more thought could be given to how to use the PhDs on the forecast side, and on the policy side, a little bit more effectively than currently. That will take some more discussion and some more interviews, but among other things many of the PhD economists think that their promotions depend more on publishing in an academic journal than on assisting on the policy side, and I think both sides of that should be rewarded. So yes on that.

Q47 **Samantha Dixon:** On the latter point about the research work that they are doing for publication, do you think that it is of much use to the Bank's core purpose or core work?

Dr Bernanke: I do think so. The Federal Reserve has extensive publications every year, and you can look at what they work on. I have relied, for example, on a number of Bank of England papers about the effects of quantitative easing, which I know is of interest to this Committee. The theory is that if you are a PhD student at university, you would have part of your time for research and part of your time for teaching and other duties.

The equivalent thing at the Bank of England is that part of your time should be for research, and I think that the most talented researchers should be allowed to continue with that for as long as they want. Part of your time, however, is also for more institutional tasks like developing models and assisting in technical analyses of various kinds. Again, we did a very quick survey. We had meetings and a lunch with PhD students. I cannot say that we have had an extensive interview with every PhD student, but I think the Bank should look at that.

Q48 **Samantha Dixon:** Do you think the Bank can compete with the private sector on remuneration to the same extent that the Fed does?

Dr Bernanke: I do not have data on that. My sense from talking to staff, including senior staff, is that it is quite difficult because, as you know, London is not a cheap place to live. There is competition from the City and so on, so it is difficult to attract and retain the best talent. That being said, I want to be clear that one of my pleasant surprises was how dedicated and qualified the staff appear to be. Apparently the remuneration limits have not prevented the Bank from bringing some good people in.

Q49 **Samantha Dixon:** You focused on the Bank's PhD staff. Is there something to be said for the practice of recruiting and developing economists and analysts without doctorates, so that the Bank can improve diversity of thought and cast a wider net?

Dr Bernanke: The Bank of England already makes heavy use of masters graduates. I would say that the majority of staff working on the forecasts—I do not have numbers in front of me, but this is my own sense—are masters graduates. I think the reliance on masters is as large as probably any other central bank—certainly much more than at the Federal Reserve, which is mostly PhD graduates. They do use the masters graduates well. As I said, they are dedicated, but there are some things, such as the more technical items or perhaps model development, that PhD graduates, in their thesis writing and so on, might have had some exposure to and might be at least more helpful with in that process.

Q50 **Samantha Dixon:** In your report you talk about staff moving around, with a sense of being incentivised to rotate through divisions to advance their careers, and that that had been an issue raised in the Stockton review in 2012. Did you get a sense of why the recommendations around that had not been implemented?

Dr Bernanke: I don't know the answer to that question. We got some information from a survey, as you may have seen, but we had a series of lunches with staff at all levels and talked to them about their experience at the Bank. This is one of the things that they continued to bring up. From my experience at the Federal Reserve, we have people there who, after getting their PhD, came and worked on fiscal policy or something, and 20 years later they are still there working on fiscal policy, so they are really expert on that issue.

I was concerned, in talking to these staff members, that they were not in one place long enough to get the depth of knowledge that they needed to be effective in dealing and working with the MPC. Why that did not change—or maybe did not change enough—I do not know, but I certainly hope that this report will stimulate some broader thinking about the use of the staff, the mix of PhDs and masters, and the kinds of staff. For example, I talked about maybe having some data analysts. We now have things such as large language models and things of that sort, so we may need people who know something about those. I do not know the answer to your question, but a review of staff utilisation would certainly be worth doing.

Samantha Dixon: Thank you. That is very helpful.

Chair: We have a couple of final questions that I am afraid colleagues want to ask to take advantage of this great opportunity.

Q51 **Keir Mather:** Indeed. While we have you here, Dr Bernanke, I have one last question. You introduced the dot plots at the Fed by which individual monetary policymakers can reveal their forecasts of the appropriate path of interest rates. What is your assessment of the impact of that model? Do you think that there are any major obstacles to the Bank doing the same?

Dr Bernanke: The dot plot is very controversial in the United States. I personally think that it is a good thing, because it provides in a very summary way what the members of the committee—the FOMC—think and gives some sense of which direction people who are not on the main line lean.

I find it useful but, as I say, it is controversial. I think some people will worry that it creates too strong forward guidance and makes people focus too much on the next data point. We had the CPI number this morning in the United States—the inflation number—and that is an example of the kind of number that the markets watch with bated breath, because they have been trained by the dot plot that the rate path is very sensitive to what is happening from month to month in the inflation rate. Again, I personally think that it was useful. By the way, it was particularly useful when we were at zero interest rate, because that was the only way we had to tell the markets when we might be leaving zero but, as I said, it is controversial even in the United States.

I do not think that dot plots are appropriate for the Bank of England, because the dot plots are made individually by the members of the committee. They are not official documents of the committee itself, which people do not always understand. They are not used in the forecast. They are not tied to assumptions—either conditioning assumptions or assumptions about what the implications of those dot plots would be for the forecast.

The reason that the dot plots are structured the way they are is, again, that the Fed has this large and geographically dispersed committee. We tried to create a collective forecast like the Bank of England, and the committee was just too large; we could not do it in the time that we had. This is a second-best approach. Again, I think it is useful, but at the Bank of England it would be inconsistent with the approach of having the MPC and the staff work together to develop a joint forecast. If the Bank decides to go to rate projections rather than the dot plot, they should have a Swedish or Norwegian-style collective rate forecast that goes into the forecast for the economy.

Keir Mather: Thank you.

Q52 **Mr Baron:** Thank you for staying with us, Dr Bernanke. Can I ask one further question on money supply? One fully understands that your recommendations are about processes and revamping the system, but can I ask you to step away from that for a moment and express a personal view on whether the Bank should in future take greater account of money supply figures than it has in the past? Whether it is a yes or a no, can you give us a reason?

Dr Bernanke: For the UK, I simply have not looked at that enough to answer your question. In the United States, the experience that I had when I was chair and we talked to people was that the effect of money on inflation depended on a number of factors. To give you an example, there was a brief period in the early '80s when Paul Volcker was chair when the Fed went to a money targeting system for a few years, and unluckily that happened to be a period when there was a lot of financial innovation and lots of new and different kinds of time deposits, checking deposits and so on. That made the velocity of money very volatile during that period and made the money supply a less useful target during that period than it might have otherwise been. Institutional factors, like changes in the kinds of chequing accounts that are available, and fiscal policy need to be taken into account.

When I was chair, we looked at the money statistics and, to the extent that there was something unusual going on, we would talk about that. There was, in fact, a period when the Fed had to report money and credit statistics to the Congress on a regular basis, but in my experience—I am talking now about the Fed, as I have not made policy in England, of course—the information content of the money supply, inflation or anything else needs to be separated from a lot of other factors that are influencing the economy and the money supply as well, such as fiscal policy. It is not a straightforward, simple one-to-one link; it is a more complicated relationship than that.

Mr Baron: Thank you.

Q53 **Chair:** A few last questions from me, if I may. In terms of implementation, you mentioned that you have met Clare Lombardelli. We know she starts on 1 July. What do you think is a reasonable timeframe for the Bank to implement the first set of recommendations, because you have recommended a phased implementation with improving the forecasting infrastructure? What is a reasonable framework for this Committee or successor Committees to expect?

Dr Bernanke: There are various things that can be done pretty much right away, like de-emphasising the main forecast in the monetary policy summary by being careful about the conditioning assumptions. They could be using some scenarios, I think. They have the ability to run a limited number of scenarios. They have already begun, but could take to another level, the forecast error evaluation that I talked about, where they look to see whether there have been predictable or consistent errors that they can explain and that would help them think about models.

The data project, I think, is supposed to be done by next year. The revamping of the model is also probably in the order of a year. It is going to have to take a while to figure out what is right. This is not quite what you asked, but I think this is a place where looking to the outside could be helpful; having a conference, for example, or talking to people at the Fed, the ECB or the IMF might provide useful input and help in terms of thinking about what models have been effective in those institutions. That part is going to take longer.

The staff part should not take too long, but I do not want to make promises for the Bank because they are the ones who have to implement it. Governor Bailey promised in his reply to have a fairly detailed menu in place by the end of the year, so I would pay close attention to what that says.

Q54 **Chair:** And is it your understanding that they have accepted all your recommendations and they are going to proceed to implementation on everything?

Dr Bernanke: I have the report here somewhere. I think it begins by saying, "We accept all—"

Chair: It did not fully commit in terms of the wording, did it? There is slightly subtle wording about the implementations. I think we take it as a Committee that they have committed to the recommendations. Have you had any pushback on the actual implementation of any of the recommendations?

Dr Bernanke: No. All I have gotten is a great deal of positivity, frankly. Of course, when they begin the process of doing some of these hard things, they may find issues that they did not think about, but as best as I can tell, it is my understanding that they intend to take all 12 recommendations seriously. I would note, as also was noted in the reply, that many of the recommendations are interlocked—that is, you have to do the infrastructure to do the alternative scenarios and so on—so they really have to think about it like a package.

We did not talk about the Stockton review from 2012, but that had many more suggestions—he called them "options". There was more of a sense there that you could pick and choose. In my review, there is a logical progress from building up the capacity in the infrastructure to using that capacity to improve policy, and then describing the policy decision process in a way that makes for better communication. It is all linked together. I am hopeful that they will address everything anyway.

Q55 **Chair:** It sounds like you deliberately chose to make your recommendations more specific and actionable, so that it did not fall into the trap of facing some of the backsliding that happened after the Stockton review. That seems to have been a deliberate choice that you made in your report.

Dr Bernanke: I felt pretty strongly that the recommendations I made were important. People have already noted that there were a couple—like the rate productions, for example—where I was a little bit more ambiguous, because I felt more ambiguous about those recommendations. Where I thought there was a clear need, particularly on the infrastructure, on the use of the forecast and on communication, I tried to be as clear as possible.

Q56 **Chair:** Thank you. Did you also evaluate the Bank's use of its agents network, and whether the data they are getting from them is useful and being used well?

Dr Bernanke: Partly. We met with the agents—they were very interesting. They do a lot of good work, I think. We had something similar at the Fed called the Beige Book, which you are probably familiar with. I heard in the meeting discussions, in preparation for the 2 November policy decision, that MPC and staff mention agents' comments. Of course, they are also included to some extent in the monetary policy report. I think the agents are useful, and the Beige Book was useful to me at the Federal Reserve. Because it is at the level of individual firms, it provides a nice counterpoint to the aggregate data that you are always dealing with as a macroeconomist. I had no reason to complain about the use of the agents, and the agents themselves felt that what they were doing was important and that they were paid attention to. We did talk to the agents and try to understand how their information was used.

Q57 **Chair:** We have heard loud and clear your offer to continue to be involved in some way during the implementation phase. Do you have a view of how frequently a review of this magnitude ought to be done at the Bank? Once in a generation is what the Governor said. In practice, it has been about 13 years since another one was done. What is your view on how frequently something like this should be done?

Dr Bernanke: I think reviews are important and they are more frequently used now by central banks than in the past. The example I know best is the Federal Reserve, which did a review of its policy framework and promised to do one every five years. The Bank of Canada does—by law, I think—a review every five years. The one thing that makes me hesitate here for a moment is that my review was specifically about forecasting and its use in policy and communication. You might want to have a review based more broadly on, for example, the framework for policy or something like the decision process. That would be able to respond to the questions people asked me today about recent performance, which I cannot answer.

In general, the Bank has had three reviews on forecasting since 2012, so I think that issue seems reasonably well covered. There is the area of general framework, and I am sure that the Court is paying a lot of attention to the governance—the House of Lords did a review on governance recently. I am wandering over the map here, but basically reviews are useful. Five or six years is a reasonable timeframe, but you need to focus the review on what you specifically want to look at. I think what is missing from the Bank of England—and I am not volunteering—is something more focused on policy implementation and framework, which other central banks are beginning to do now.

Q58 **Chair:** There is a major thing that the Bank of England is doing at the moment that this Committee wrote a report on back in January, which is the quantitative tightening programme. We have heard from the Bank time and again that they estimate it will have a tightening impact of 10 to 25 basis points in the real world. Recent research from other countries seems to indicate that it could be more impactful than that. Is that the sort of thing that ought to be reviewed pretty frequently?

Dr Bernanke: That is a narrower issue. If you were looking at the framework generally, one of things that you would want to look at is the tools that you have. You would look at rate policy, for example. The UK is unusual because of the structure of mortgages, for example, so you would look at how the rate policy works in the UK. Quantitative easing and tightening is just one other tool that the monetary policy authorities have.

Questions about when you use it, how you use it and how effective it is would be part of a broader review of tools and strategy. Obviously, QE is an important topic on its own, so I am not saying that is not worth looking at, but a broad-ranging review would probably want to look at broader set of issues than just QT.

Chair: Thank you. Unless my colleagues have any further questions, I am going to conclude the Committee's evidence session. You have been generous with your time and very forthcoming with your answers. Thank you again, both for your evidence today and for doing the review.